Product data sheet

LUTM-UP817A1P

LUTM

LUMINESCENCE SENSORS

SICK
Sensor Intelligence.

Ordering information

Type	Part no.
LUTM-UP817A1P	1087463

Other models and accessories ➜ www.sick.com/LUTM

Detailed technical data

Features

Dimensions (W x H x D)	12 mm x 31.5 mm x 21 mm
Sensing distance	12.5 mm [1]
Housing design (light emission)	Rectangular
Working range	8 mm ... 20 mm
Light source	LED, Ultraviolet light [2]
Wave length	370 nm
Light emission	Long side
Light spot size	2 mm x 2.5 mm [3]
Light spot direction	Vertical
Receiving range	450 nm ... 750 nm
Adjustment	Cable, IO-Link
Teach-in mode	2-point teach-in static/dynamic
Output function	Light/dark switching [4]

[1] From front edge of lens.
[2] Average service life: 100,000 h at T_U = +25 °C.
[3] At sensing distance.
[4] L/D switching via teach-in.

Mechanics/electronics

Supply voltage	12 V DC ... 24 V DC [1]
Ripple	≤ 5 V_{pp} [2]
Current consumption	≤ 50 mA [3]
Switching frequency	6 kHz [4]
Response time	80 µs [5]
Jitter	40 µs
Switching output	PNP
Switching output (voltage)	PNP: HIGH = V_S– ≤ 2 V / LOW approx. 0 V
Switching mode	Light/dark switching
Output current $I_{max.}$	< 100 mA [6]
Connection type	Male connector M8, 4-pin
Protection class	III
Circuit protection	U_V connections, reverse polarity protected Output Q short-circuit protected Interference pulse suppression
Enclosure rating	IP67
Weight	70 g
Housing material	Plastic, ABS

[1] Limit values: DC 12 V (–10 %) ... DC 24 V (+20 %). Operation in short-circuit protected network max. 8 A.
[2] May not exceed or fall below U_V tolerances.
[3] Without load.
[4] With light/dark ratio 1:1.
[5] Signal transit time with resistive load.
[6] At supply voltage > 24 V, I_{max} = 30 mA. I_{max} is consumption count of all Q_n.

Communication interface

Communication interface	IO-Link
Cycle time	2.3 ms
Process data length	16 Bit
Process data structure A	Bit 0 = switching signal Q_{L1} Bit 1 = Quality of Run Alarm Bit 2 = Teach successful Bit 3 = Teach busy Bit 4 ... 15 = empty
Process data structure B	Bit 0 = switching signal Q_{L1} Bit 1 = Quality of Run Alarm Bit 2 = Teach successful Bit 3 = Teach busy Bit 4 ... 15 = empty Bit 6 ... 15 = measuring value
VendorID	26
DeviceID HEX	800072
DeviceID DEC	8388722

Ambient data

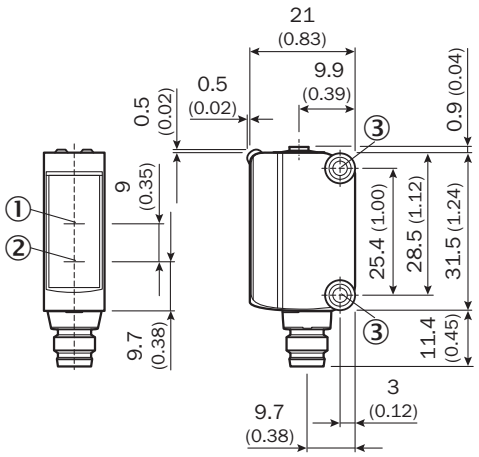
Ambient operating temperature	–10 °C ... +55 °C
Ambient storage temperature	–20 °C ... +75 °C

Shock load	According to IEC 60068
UL File No.	NRKH.E348498 & NRKH7.E348498

Classifications

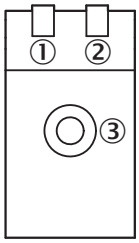
ECl@ss 5.0	27270908
ECl@ss 5.1.4	27270908
ECl@ss 6.0	27270908
ECl@ss 6.2	27270908
ECl@ss 7.0	27270908
ECl@ss 8.0	27270908
ECl@ss 8.1	27270908
ECl@ss 9.0	27270908
ECl@ss 10.0	27270908
ECl@ss 11.0	27270908
ETIM 5.0	EC001822
ETIM 6.0	EC001822
ETIM 7.0	EC001822
UNSPSC 16.0901	39121528

Dimensional drawing (Dimensions in mm (inch))



① Optical axis, receiver
② Optical axis, sender
③ M3 mounting hole

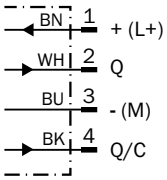
Adjustments



① LED indicator, yellow: Status switching output Q
② LED indicator green: Supply voltage active
③ Teach-in button

Connection diagram

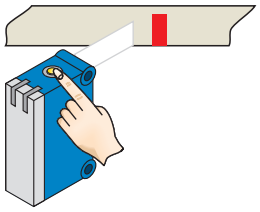
Cd-309



Concept of operation

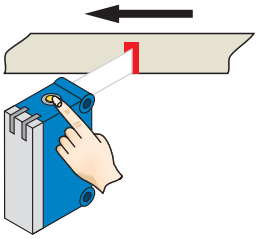
Setting the switching threshold (dynamic)

1. Position background

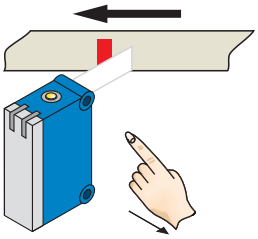


Press the teach-in button and keep it pressed. LED flashing slowly.

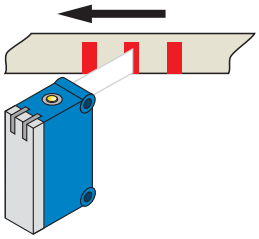
2. Move at least the fluorecent mark and background using the light spot.



Keep the teach-in button > 3 < 30 s pressed.

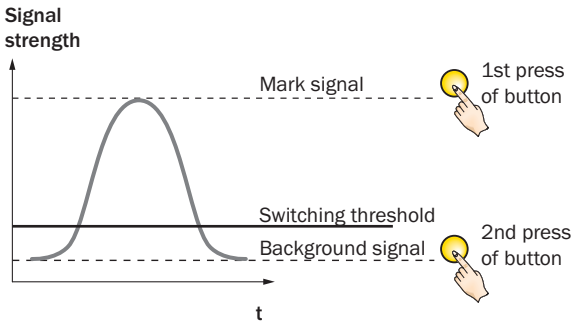


Release the teach-in button.



Yellow LED will illuminate, when emitted light is on the fluorecent mark.

Sensitivity setting



Switching characteristics
Static teach-in: light/dark setting is defined using teach-in sequence.
Dynamic teach-in: switching output active on fluorecent mark, if background is longer in the field of view during the teach-in. The switching threshold is set automatically between the background and the mark.

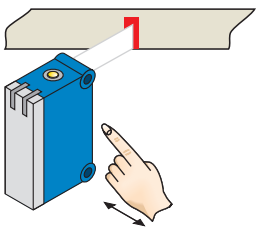
Teach-in can also be performed using an external control signal (only dynamic teach-in).

Keylock activation and deactivation: hold down teach-in button > 30 s.

Teach-in failure: yellow LED indicator and the transmitted light of the sensor flashing quickly.
For dynamic teach-in with ET signal (5 Hz) via switching output Q.

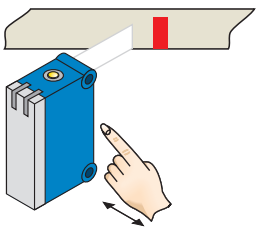
Setting the switching threshold (static)

1. Position fluorecent mark



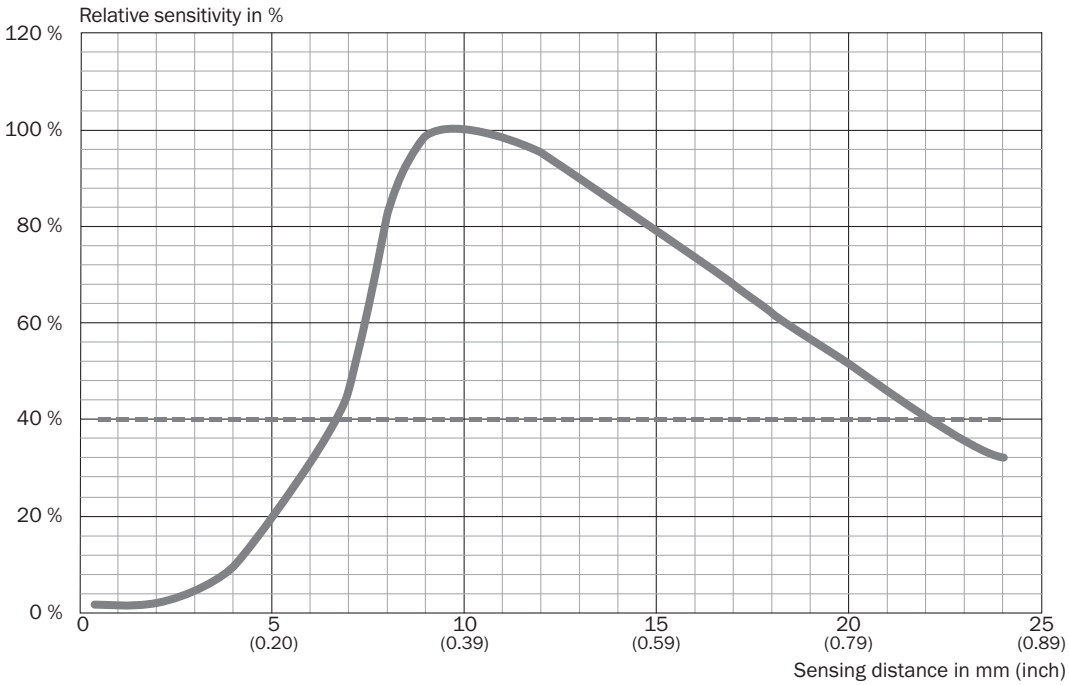
Press and hold teach-in button > 1 < 3 s.
Yellow LED flashes slowly.

2. Position background



Press and hold teach-in button < 3 s.
Yellow LED goes out.

Sensing distance



Recommended accessories

Other models and accessories ➜ www.sick.com/LUTM

	Brief description	Type	Part no.
Mounting brackets and plates			
	Stainless steel (1.4301)	BEF-WN-G6	2062909
Modules and gateways			
	IO-Link version V1.1, Port class 2, PIN 2, 4, 5 galvanically connected, Supply voltage 18 V DC ... 32 V DC (limit values, operation in short-circuit protected network max. 8 A)	IOLP2ZZ-M3201 (SICK Memory Stick)	1064290
	IO-Link V1.1 Class A port, USB2.0 port, optional external power supply 24V / 1A	IOLA2US-01101 (SiLink2 Master)	1061790
Plug connectors and cables			
	Head A: female connector, M8, 4-pin, straight, A-coded Head B: Flying leads Cable: Sensor/actuator cable, PVC, unshielded, 5 m	YF8U14-050VA3XLEAX	2095889
	Head A: male connector, M8, 4-pin, straight Head B: - Cable: unshielded	STE-0804-G	6037323

	Brief description	Type	Part no.
SIG200			
		SIG200-0A0412200	1089794
		SIG200-0A0G12200	1102605

Recommended services

Additional services ➜ www.sick.com/LUTM

	Type	Part no.
Function Block Factory		
• **Description:** The Function Block Factory supports common programmable logic controllers (PLCs) from various manufacturers, such as Siemens, Beckhoff, Rockwell Automation and B&R. More information on the FBF can be found here.	Function Block Factory	On request

SICK AT A GLANCE

SICK is one of the leading manufacturers of intelligent sensors and sensor solutions for industrial applications. A unique range of products and services creates the perfect basis for controlling processes securely and efficiently, protecting individuals from accidents and preventing damage to the environment.

We have extensive experience in a wide range of industries and understand their processes and requirements. With intelligent sensors, we can deliver exactly what our customers need. In application centers in Europe, Asia and North America, system solutions are tested and optimized in accordance with customer specifications. All this makes us a reliable supplier and development partner.

Comprehensive services complete our offering: SICK LifeTime Services provide support throughout the machine life cycle and ensure safety and productivity.

For us, that is “Sensor Intelligence.”

WORLDWIDE PRESENCE:

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